

REMARKS

In the Office Action, the Examiner objected to the drawings for the reason that they contained informal reference characters. Applicant is submitting herewith a complete set of replacement drawings with formalized reference characters. Applicant has verified that the reference characters in the drawings are described in the detailed description of the specification and that all reference characters mentioned in the specification are included in the appropriate drawings.

In the Office Action, the Examiner rejected claims 1, 3, 5, 6, 7, 8 and 11-16 under 35 U.S.C. §102(b) as being anticipated by Berger et al. (5,879,279). Applicant respectfully traverses the Examiner's rejection.

Applicant's claimed invention provides a simple efficient and innovative improvement in the field of centrifugal separators. A drive motor is directly engaged with the shaft of the scraper blade and the shaft of the scraper blade is engageable by a clutch member to the spindle which drives the centrifugal bowl. When operating the centrifugal separator of this invention, the bowl and scraper blade rotate together at a high speed as they are engaged with each other by the clutch member. After particulate matter has crusted onto the interior surface of centrifugal bowl, the unit is stopped and the bowl is locked in a fixed position. The scraper blade is then driven by the directly engaged motor to scrape the interior surface of the bowl. The process of scraping the interior surface of the bowl requires a high amount of torque. Problems have been encountered with most

prior art centrifugal separators when performing this scraping activity through failure of drive motors, clutches and drive belts. This present invention simplifies the mechanics of the prior art and provides more efficient operation than the prior art.

The centrifugal separator of Berger (5,879,279) presents the type of complicated mechanism that the claimed invention improves upon. Berger employs a main drive spindle 30 coupled to a drive mechanism to drive the centrifugal bowl 42. A clutch member engages the centrifugal bowl with the scraper mechanism to provide synchronous rotation during the separating process. To initiate the scraping process, a second drive member 96 is engaged by bevel gears to the plow blade drive shaft 55 and the main drive spindle 30. The bowl and scraper are then driven in counter-rotating directions to perform the scraping action. Commonly, the use of such gearing to engage the drive motor with the scraper blade to undertake the high torque process of scraping creates an opportunity for failure of the drive mechanisms.

Applicant's claimed invention greatly improves upon the apparatus of Berger in that it only uses a single drive for rotating the bowl and the scraper and performing the separation process step and the scraping process step. Further, the direct engagement of the drive motor with the scraper blade eliminates the potential for failure of gearing and clutch interconnections during the high torque scraping operations. Applicant respectfully submits that the claims, as amended,

patentably distinguish over the Berger '279 reference and favorable action is requested.

In the Office Action, the Examiner rejected claims 1, 5, 6 and 7 under 35 U.S.C. §102(e) as being anticipated by Beattey (6,478,724). The Beattey reference again discloses a prior art device, the complexities of which the invention is intended to improve upon. Beatty includes a centrifugal bowl 185 which is driven by a spindle 160 and a scraper blade 170 which is driven by shaft 161. A motor 207 drives the spindle 160 through a belt 208 and pulley 143 mechanism. When it is desired to rotate the scraper blade and bowl and synchronous speeds during the separation processing, the clutch assembly 120 is engaged. To initiate the scraping operation, the clutch disengages and the scraper blade shaft is locked in position. The bowl continues to rotate to initiate scraping of the interior surface of the bowl. In this manner, the drive motor, belt and pulley are forced to endure the high torque of driving the massive bowl against the scraper blade. There is provided in the Beattey prior art mechanism the potential for failure of the drive mechanism or slippage of the belt and pulley mechanism.

Applicant's claimed invention improves upon the Beattey structure in two very distinct ways. The scraper blade is driven by the directly engaged motor and the clutch member is only used to engage the scraper and bowl together during the separation phase of operation. Applicant submits that his invention, as claimed, patentably distinguishes over the Beattey reference and favorable action

is respectfully requested.

In the Office Action, the Examiner rejected claims 2, 4, 9 and 10 under 35 U.S.C. §103(a) as being unpatentable over the Berger '279 reference in view of Ziems et al. (5,454,777).

Applicant submits that the Ziems reference fails to overcome the deficiencies of the Berger reference as discussed earlier herein. Applicant submits that claims 2, 4, 9 and 10 provide patentable subject matter over the deficiencies of the Berger '279 reference in view of Ziems. Favorable action is respectfully requested.

In the Office Action, the Examiner rejected claims 2, 9 and 10 under 35 U.S.C. §103(a) as being unpatentable over the Beatty '724 reference in view of the Ziems '777 reference.

Applicant submits that the Ziems reference fails to overcome the deficiencies of the Beatty reference as discussed earlier herein. Therefore, Applicant submits that claims 2, 9 and 10 present patentable subject matter over the deficiencies of Beatty in view of Ziems. Favorable action is respectfully requested.

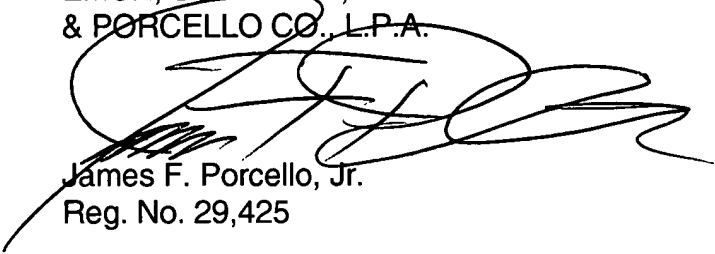
10/642,793

03052

Applicant respectfully submits that the claims, as amended, are in condition for allowance and favorable action is requested.

Respectfully submitted,

EMCH, SCHAEFFER, SCHAUB  
& PORCELLO CO., L.P.A.



James F. Porcello, Jr.  
Reg. No. 29,425

P.O. Box 916  
Toledo, Ohio 43697  
Ph: (419) 243-1294  
Fax (419) 243-8502